

Statement of

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

before the  
Subcommittee on Independent Offices  
Committee on Appropriations  
United States Senate

*Supplemental?*

Mr. Chairman and Members of the Committee:

I appreciate this opportunity to appear in support of the President's request for the appropriation of the National Aeronautics and Space Administration for Fiscal Year 1965.

With the support of this Committee and the Congress during the five and one half years since the Agency was created, a period which has seen the Presidency pass from President Eisenhower to President Kennedy and on to President Johnson, NASA has found its place in government and has made substantial progress in providing the basic scientific research and technological development required for the accomplishment of the national objective of enduring pre-eminence in space. As the members of this Committee are well aware, the role of NASA, like that of its predecessor, the National Advisory Committee for Aeronautics, is one of conducting basic research and development which will effectively support the operational requirements of other governmental agencies, including the Department of Defense. The process is to proceed from theoretical studies to experimental tests and on to flight prototypes, with carefully engineered systems of feed-back of experimental and

flight prototype data to test the theory and extend it. The progress which has been made and what we have learned in achieving it enables us now to consider and take action with greater confidence in matters relating to the nation's future course in space exploration and operations. Meanwhile, however, our progress in technology and our vastly increased industrial base and facilities, place us in a position in which we as a nation can do more in space than currently available resources will permit.

It might be said that we have advanced rapidly from a period in which we were far <sup>behind</sup> ~~beyond~~ the Russians and did everything that we could in space, and regretted our inability to do more. Today, although we are still behind in manned space flight, we have a very large capability and have achieved a momentum which, if maintained, will enable us to move ahead of the Soviet Union in the 1965-67 time period. We remain aware, however, of the hazards of overconfidence, of languor or apathy, and recognize that there are still many unknowns; that the competition is still vigorous and could again threaten our position of world leadership. We are, therefore, as a nation and as a free society, increasingly confronted with hard decisions in the selection of the programs which will maintain our capabilities in this age of science and technology.

With respect to the pace of the program, it is essential to recognize that in 1961 we, as a nation, overwhelmingly approved the Apollo program to achieve pre-eminence in manned space operations out to one quarter million miles from the earth, and to use this ability to place American explorers on the moon in this decade, and return them safely to earth. As a consequence, we have underway a program to accomplish these objectives, with all of the major elements already under contract, and phased to make possible, barring some unforeseen difficulty, a lunar exploration in 1969. This is not a crash program. It is an orderly program which is producing a momentum in science and technology that will maintain this nation's strength in an era which sees national strength measured in terms of the manifold capabilities brought into being by technological advances.

The nation is in a position, therefore, of already having in being a program which will accomplish these objectives. Moreover, with the approval of the NASA budget for Fiscal Year 1965, the Congress will already have appropriated more than half--some \$11.5 billion--of the funds required for the successful execution of the Apollo program within the time scale which has been established. From a fiscal standpoint, with the approval of this budget, we will be over the hill as far as the Apollo program is concerned, with the bulk of the funding requirements out of the way.

To put it more succinctly, if Congress approves the NASA budget request for FY 1965, the United States will be more than halfway to the moon.

Many difficult choices were associated with the preparation of the program for which funds are requested for Fiscal Year 1965. We have deferred or eliminated many projects which were contenders for a place in the program. When budgetary limitations are less restrictive, and as space exploration moves ahead, the nation will undoubtedly decide to undertake some of the proposals which were eliminated from the request for FY 1965. The activities which the President has proposed will, in my judgment and that of my associates, produce the greatest possible benefits for the country within the limitations of the national resources which are available and can prudently be spent for NASA programs.

For Fiscal Year 1965, an appropriation of \$5.304 billion is requested for continued progress toward achievement of our national objectives in space. This appropriation will allow us to move forward effectively with a balanced aeronautics and space program that will assure the United States a position of world leadership in this critical area of science and technology.

The President's request for FY 1965 is made up of: \$4.382 billion for research and development; \$281 million for construction



of facilities; and \$641 million for administrative operations. Mr. Chairman, I am prepared to supply a detailed breakdown of this budget in this oral presentation, but with your permission, to conserve the Committee's time, I should like to submit for the record a statement which encompasses the purposes for which we have allocated the funds requested for FY 1965.

The bulk of the funds requested for Fiscal Year 1965 are for the continuation of programs previously authorized by the Congress, and which are in the hardware production or construction phase at this time. Less than two percent--\$68 million--of the total request is for new research and development projects. These include \$5 million in the communications satellite program to conduct research, and to develop and test gravity gradient stabilization technology in support of the Department of Defense communications satellite program; \$3.2 million for flight experiments in conjunction with a synchronous equatorial meteorological satellite which will continuously monitor short-lived storms; and \$31 million for necessary spacecraft development in support of the advanced technological satellite program. This is the sort of advanced research which is necessary to insure that the nation will remain at the cutting edge of space science and technology to insure that it can maintain pre-eminence once it has been attained.

Five orbital flights are planned, using the Atlas-Agena launch vehicle -- one, a gravity gradient technology satellite in a 6,500 mile orbit, and four in stationary orbits, two of which will be spin stabilized and two earth oriented. Also included in the category of new programs is \$11 million for design and development of instruments for scientific experiments on manned space flight missions, which is now budgeted as a separate item. These funds will also be used to train the astronauts as scientific observers and participants in specific experiments, to develop equipment for scientific investigations on manned Gemini and Apollo missions, and to study the potential scientific uses of proposed future manned spacecraft systems. This project will help assure that the distinct advantage of manned over unmanned scientific systems is fully exploited. Also included in our new programs is a request for \$17.5 million to move into the development phase of the fluorine -- oxygen propellant program which was initiated in Fiscal Year 1964. This program will uprate the performance of existing launch vehicles by factors of 30 to 80 percent depending on the mission.

The appropriations which are being requested for Fiscal Year 1965, coupled with President Johnson's request for a supplemental appropriation of \$141 million for FY 1964, constitute the funds

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which NASA must have if we are to maintain the kind of efficient effort which will enable us to meet established national objectives, including that of conducting extensive experiments in manned space flight and using this ability to explore the moon with men within this decade.

The Committee will recall that last year \$5,350 million was authorized for NASA, a reduction of \$362 million in the amount requested by President Kennedy. Moreover, only \$5.1 billion was appropriated, some \$600 million less than the original request. As a consequence, the program we are now carrying forward is not the program President Kennedy presented to the Congress last year, but one which has been substantially revised in both content and timing of all major program and project elements. For example, in the area of manned flight, we have had to sacrifice the remaining "insurance" or margin for error which had been built into the program as a hedge against unforeseeable or intractable technical problems related to the experimental flights in both Gemini and Apollo.

I would be less than candid if I did not acknowledge that we view the possibility of conducting a successful manned lunar exploration within the time period which has been established with far less confidence than would have been the case had we obtained

sufficient funds to conduct the preliminary activities at the times which were originally planned. However, given approval of the budget we are presenting today, even with the reductions in funds and technological delays which occurred last year, we are still able to set the important target dates within a time period which we believe can be met, and which can give us a "fighting chance" to complete the 5,000 man hours of manned space flight experience which we have programmed, and then proceed immediately to the lunar exploration and to do it within this decade. We hope that Congress will give us this fighting chance.

I must emphasize, Mr. Chairman, that in adjusting our program to compensate for the reduction made in the appropriation for FY 1964, we have already sacrificed the margins and early target dates which are needed in this kind of very advanced effort to achieve the goals which have been established for the nation. To reschedule work underway to meet further reductions, while still maintaining a fighting chance to meet the national goal of lunar exploration within this decade, would require that we arbitrarily make further cuts in our unmanned space flight programs and advanced research in order to maintain the lunar landing schedule. Such a step would result in the cancellation of vital scientific and technological efforts thereby wasting many million dollars in prior

expenditures. In addition, this action would add to the total cost of the Apollo mission, while actually diminishing its inherent return by unbalancing the total scientific and engineering endeavor necessary to achieve the national objective of pre-eminence in space.

To establish and maintain leadership in space requires progress in many areas of space science and technology, as well as in manned space flight. To structure an unbalanced overall effort, in order to achieve the Apollo manned flight capability and the lunar exploration mission within a total funding level below that required, would leave the nation unprepared scientifically to support the engineering and flight missions that may be required for space leadership in the 1970's.

If we were to yield to that temptation, the nation might well find itself on the moon in 1969, and surpassed in the more advanced space efforts of the years after that. We might again find ourselves in the situation which we faced when Sputnik I was launched in 1957.

This Committee is well aware, I know, that while the Apollo program is sometimes regarded as an end in itself, it is in reality the present focal point of the much greater national objective of pre-eminence in space. The requirements for a

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successful lunar exploration are much the same as the requirements for overall pre-eminence, and most of the things which are included in the NASA program would be required to insure United States space leadership even if we had no desire nor intention to place a team of American explorers on the moon.

It may be of significance, however, to point out that our best estimate reveals that 90 percent or more of the systems presently under development to accomplish the Apollo goal will be useful in other projects not directed toward lunar exploration. For example, the Saturn rockets may be used to launch larger unmanned payloads to investigate the planets and interplanetary space. They may also be used to orbit large payloads near the earth such as manned orbiting laboratories or large unmanned observatories. Similarly, the launch vehicles and elements of the spacecraft can prove useful as ferries or logistic systems for resupplying orbiting laboratories or for providing transportation between orbits. The ground tracking and data handling systems are indispensable to all the future space flight objectives, as are the ground logistics and launch systems. The production and testing facilities, although not generally identified as systems, would also be useful for future space operations. The integrated mission control center can well serve as the flight operations center for the DOD Gemini B/MOL program.

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One more point should be made regarding the Apollo program, which will be of particular interest to this committee. The nation is in a position of already having in being a program which will give us a space flight capability in the area around the earth out to 250,000 miles and accomplish the objective of exploring the moon within this decade. This program cannot be stretched out without increasing the ultimate costs. Obviously, we do not know when or whether the Russians will again attempt to seize a strong initiative in space, but whether it is agreed or not that international considerations and national security factors require that we hold to the present space program, the fact is that prudence and economy will be served.

Even if economy alone were to be the guiding consideration in the evaluation of the NASA request for FY 1965, the cost of establishing and maintaining superiority in space will be less if we maintain the pace, the momentum, which the supplemental appropriation for FY 1964 and the appropriation request for FY 1965 will provide. In maintaining that momentum we will demonstrate that we have the will to carry out programs which are in our own interest no matter what others may do, and that we intend to acquire and maintain an unequivocal primary position in space exploration and operations.

But, Mr. Chairman, I am prepared to say that, if the program further curtailed, if the momentum is lost, if the Apollo program is stretched into the next decade, the cost will not be \$20 <sup>billion</sup> ~~million~~; it will be several billions more. The Office of Manned Space Flight has made a careful study of the effects of a stretched out lunar program and has prepared cost estimates involving the extension of the landing date for a period of up to six years. This study indicates that the cost of the lunar exploration would increase by approximately \$1 billion for each year that the landing is delayed. A three-year delay would cost three billion; a six-year delay \$6 billion, with no corresponding improvement in the benefits obtained.

This increased expense arises because the cost of a major search and development program is roughly the sum of three factors:

(1) a constant factor that designates work that must be done and

facilities that must be constructed, regardless of the pace at which the program is conducted, and with most of this going to pay the people in contractor plants working on the program; (2) an operating burden, which covers costs that must be incurred at a relatively fixed level while the program is underway, and therefore accumulate in almost direct proportion to the time required for completion of the program; and (3) a time-saving factor, which includes funds expended for such purposes as overtime, parallel paths of development, the purchase of hardware and facilities beyond those which would be required for a slower-paced program, and the provision of duplicate personnel complements for launch preparations and associated efforts.

A minimum-cost program is one in which the amounts expended on operating burdens and time-saving factors are relatively in balance, and that is the case with our program as it was presented last year. The stretch out to the very last of this decade, which is the basis of the 1965 budget, involves some increase in costs over the level which could have been attained. But we have not planned, either for 1964 or 1965, premium overtime and inefficient multi-shift operations in order to save time. Neither, however, have we established a pace so slow that the operating burden absorbs an exorbitant share of the total expenditure.



If the lunar landing date is delayed further, the operating burden will begin to consume an unreasonable share of the funds provided. The costs to which I refer include the support of thousands of skilled engineers, scientists and technicians who must be on hand to support the flight and ground test activity that continues throughout the total development program, whether the flight tests are on three or six month centers. This includes the propulsion, electronics, structures, thermodynamics, astrodynamics, guidance, control and launch specialists and the supporting technicians, to name but a few, as well as the clerical and management staffs required by each industrial contractor to do business.

Let me repeat, this cost base exists whether we are flying once in three months or once in six months. As a result, the cost associated with each event in the program increases as the program is delayed. For this reason, if economy is to be the watchword, and if we are to meet the stated national goal of lunar exploration within this decade, both the supplemental appropriation for FY 1964 and the request for FY 1965 are required.

There are some who have a deep and sincere concern for human welfare, and who occasionally question whether it is wise for the nation to vigorously pursue a program of space exploration at the level of funding which presently prevails, when there exists so many human needs here on earth in areas such as medical research, housing, and



education. This is a matter which deserves the Committee's attention, because it is important, and with your permission, Mr. Chairman, I would like to spend a moment or two on it.

To place the matter in perspective, it is necessary first of all to recognize that the funds appropriated for space research and development are not being spent in space, they are being spent here on earth, in the construction of facilities, the manufacture of rockets and spacecraft, and the conduct of vital scientific research and technological development. As a consequence of this expenditure, the space program is making a substantial contribution to employment and to the ability of many of our citizens to provide for their own needs with respect to housing, medical care, education and the like. In addition, although it is difficult to measure and impossible to prove, history and reason tell us that the potential economic benefit from a research and development effort of this magnitude will itself make a significant contribution to the improved human welfare during the years ahead.

It is also fair to say, I believe, that space research and development is not being conducted at the expense of other forms of federal activity nor is it being funded on the basis of decisions in this Committee and in the Congress that we will do less in other areas to make space exploration possible. Nor in view of the gross national product which we have achieved, is space exploration imposing an

unreasonable burden on the nation's resources. As a consequence, there is no evidence, nor is it likely, that reduced expenditures for space exploration would result in increased appropriations for other purposes, such as housing or education or medical research.

With specific reference to scientific research, it is important to recognize that there is no new science which can be called "space" science. Instead, we are dealing with a situation in which the rocket has given science the opportunity to conduct scientific research in a new and promising environment which was not previously available to man. However, the areas of science in which research is being conducted are those which have concerned mankind throughout human existence upon earth, and the advances which are being made in every area of science as a result of our ability to conduct research in the space environment will have a profound effect on every scientific discipline, and contribute greatly to progress in all scientific fields. For example, while it cannot be predicted, it is entirely conceivable that research in space may yield knowledge of greater value in the field of medicine than some of the research now being directed specifically toward progress in the understanding and elimination of disease.

It may also be of interest that the statistical evidence indicates that space research, rather than inhibiting research in other specific areas such as cancer research, has stimulated interest in them. The federally-sponsored research in virtually every area which was underway

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prior to the enactment of the Space Act in 1958 has increased at a percentage rate equal to, and in many cases is greater than the rate of increase in expenditures for the space program. It would appear, therefore, that the interest in scientific activity which has been generated by man's new opportunity in space has had the effect of encouraging a greater level of activity in all forms of scientific research.

The most important point, however, is the fact that a succession of Congresses and Presidents, viewing the opportunities and the challenges available in space, have concluded that the national interest demands a vigorous space program. It demands it for considerations involving our national security, our position of international leadership, our ability to stay abreast of the Soviet Union in the international economic competition, its value as a challenge to the American people, particularly the young, and the associated improvement in education, as well as for the scientific and economic benefits which will result. While it may be true that our increasing capability in space over the past year or two has reduced somewhat our concern over some of these factors, they do still exist, nevertheless. Failure to continue to pursue a vigorous, but orderly program, with the result that we might again fall behind, might very

well be expected to force us into "crash" efforts a few years hence, such as those which were required immediately after the launching of Sputnik I in 1957. In short, Mr. Chairman and Members of the Committee, it would be most unwise to base our decisions with respect to the funding of space activity on any consideration other than what the national interest requires of us at this time, and reasonable assumptions of what and may be required of us in the years ahead.

I know that the interest of this committee in national resources extends beyond tax dollars to other resources such as our use of the available supply of scientific and engineering manpower, and the most recent information with respect to the impact of the NASA program in this area may, therefore, be of interest.

I have testified previously that the evidence did not indicate that NASA's requirement was adversely affecting other areas, and in recent months there is mounting evidence which indicates the validity of that position.

At the beginning of this calendar year, approximately 74,000 scientists and engineers were employed in the NASA program-- about 12,000 within NASA, and 62,000 under NASA contracts and grants. This amounted to approximately 4.9 percent of the 1.5 million scientists and engineers in the nation's work force.

By next January, it is estimated that about 82,000 scientists and engineers will be working on the NASA program; about 5.2 percent of the available national supply. If new space missions are approved for the post-Apollo period and if this increment causes the space effort to be continued at the present level of funding for the remainder of the decade, NASA's program would not require at anytime more than 5.5 percent of the national supply of scientists and engineers.

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I do not know what post-Apollo missions this nation will find it wise to undertake, but we will have the know-how and the government-industry-university complex to do anything we may need to do and it is of particular interest that NASA's requirement for additional engineers has peaked at an earlier period than had been anticipated. Current statistics indicate that the number employed on NASA work increased by about 30,000 during the last calendar year, rather than 20,000 as had been anticipated. As a consequence, our requirement for the current year will be only about 8,000 instead of 18,000 as had been projected. We will thus require a much smaller share than had been anticipated of the 45,000 engineers who will complete their education this year.

It has also become increasingly apparent that NASA requirements have been met without significant adverse affects on the growth of other national programs requiring scientists and engineers. A substantial portion of last year's growth was absorbed by NASA contractors without adding new personnel, due to reductions in other

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programs being handled by these contractors, and upgrading of existing employees. NASA's industrial contractors are estimated to have absorbed last year at least one-<sup>fourth</sup>~~fourth~~ of NASA's increased scientific and engineering workload. Because of the relatively limited amount of new systems development included in the Defense budget for FY 1965, and other factors, this ability of industrial contractors to absorb NASA work without corresponding increases in their technical manpower requirements is expected to continue.

I might also note that during recent months increasing public attention has been given to evidence that we may be moving into a period of surplus with respect to professional engineering personnel. The business newspapers and magazines have cited evidence from personnel agencies, and quoted surveys made by private firms, all of which point to a declining demand for engineering talent.

Only a few weeks ago, Dr. William J. Harris, Jr., Chairman of the Government Liaison Committee of the Engineers Joint Council, testified before the Select Committee on Government Research in the House that "were it not for the growing space program, the country could be in a period of declining utilization of scientists and engineers."

It would appear, Mr. Chairman, that rather than using too much of the nation's technical manpower, space activity may well prove to be the force which holds together the nation's great resource of trained scientists and engineers.

NASA has foreseen, however, that the imaginative, creative, highly-educated scientist or engineer who has been trained to the doctorate level will always be in great demand. As a consequence, our pre-doctoral training grant program has been oriented toward insuring a continuing supply, and we are conducting a maximum amount of basic research under contract with the nation's universities, in

order that it will contribute to and upgrade graduate education, as well as produce the scientific results desired. These efforts are being carried out on a very broad basis throughout the nation, and are not concentrated in a small number of universities. Pre-doctoral training grants, made by a university to promising young men and women in its own area are now being supported at 131 institutions, and through the use of project research grants and other sustaining university program grants, NASA is working with a total of 166 universities across the country. We are broadening the base of university participation in the space program.

The FY 1965 funding requirement for the Sustaining University Program, which augments and complements our sponsored project research, is \$46 million. Of this, \$25 million is budgeted for predoctoral training, an activity planned since its inception to level off at \$30 million to meet the established goal of 1,000 new Ph.D.'s per year. This is about one-fourth of the increase in national output recommended by the "Gilliland Report" of the President's Science Advisory Committee.

We propose to increase the number of predoctoral trainees at the 131 institutions which are presently participating by about 150, and to bring about 10 new schools into the program for the first time, with an additional increment of about 50 students. We would then be supporting the training of pre-doctoral students in space-related areas in at least one institution in each of the 50



states. Approximately 1271 graduate students would start their training in FY 1965, compared with 1071 in FY 1964, with the ultimate objective an entrance rate of 1333 per year.

I would like to stress to the Committee that the NASA pre-doctoral training program is an effort to respond vigorously to an urgent national need, which fits in with and is coordinated with other federal activity in this field. The report of the President's Scientific Advisory Committee of December 12, 1962, noted that the federal program of support for pre-doctoral training represented only a limited attack on manpower needs in this field, but went on to observe that "The recent NASA fellowship program...may have instituted at least a minor trend reversal." Subsequently, the former presidential science advisor, Dr. Jerome <sup>Wiesner</sup>~~Weisner~~, urged support of the NASA program, and gave Congress the assurance that it was being conducted as part of a "coordinated program" of federal activity in the field.

The Sustaining University Program research activity directly complements NASA's sponsored research program by enabling participating universities to develop and increase their capabilities to support the growing demands of the national space effort. Research grants will be used to foster multidisciplinary research efforts which focus talents from several different research areas on some of our most challenging and complex problems, to promote the consolidation



of related projects, to stimulate new investigations which fill recognized gaps, and to aid the development of new space-oriented capabilities.

The \$11 million required in FY 1965 will be allocated to about 60 grants to 51 universities and colleges in 32 states. Forty of these 60 will be for the continuation of projects initiated in prior years, and the remaining 20 will go to institutions which will be able to participate in the Sustaining University Program research activity for the first time. Of the sixty grants, slightly more than 1/3 will be in support of multi-disciplinary investigations, roughly 1/3 will be used to augment existing sponsored research programs and somewhat less than 1/3 will be for the stimulation and development of new research capabilities in areas of importance to NASA.

Our university facilities grant program is designed to alleviate only the most pressing of those situations confronting us. In the interest of continuing an urgently required program, properly balanced to assure economy in operation and frugal management, while providing the most efficiently designed and constructed facilities possible, we have decreased our request for this year's operation to \$10 million as compared with the \$12 million appropriated in FY 1964.

Of particular interest to this Committee, I am sure, is the extent to which NASA research and development also contributes to other agencies

of the government, and particularly to the requirements of the Department of Defense. Within the past three years, the technology for an entirely new kind of worldwide communications system, based on repeater satellites, has been developed, and the Communications Satellite Corporation created to exploit this technology.

The successful launching and experimental development of the first seven Tiros weather satellites has given the nation the basic technology for a worldwide weather system, and infra-red measurement system, and also has added greatly to the research capability of meteorologists around the world. The eighth Tiros satellite, now in orbit, carries a unique automatic picture transmission system which permits overseas units of our armed forces and any nation over which it passes to obtain directly from the satellite the pictures of its own cloud cover.

NASA activities in each of these fields is of great interest to the Department of Defense, as are most of the technological and scientific developments which result from NASA research. Just as the predecessor agency, the National Advisory Committee for Aeronautics, contributed technology to the development of military aircraft and missiles, so is NASA supplying scientific and technological knowledge for military developments in both aeronautics and space.

Meanwhile, NASA has relied heavily on launch vehicles adapted from missiles developed by the Department of Defense, and receives



strong support in its manned launches from armed forces personnel, and in its construction efforts, from the Army Corps of Engineers and the Navy's Bureau of Yards and Docks. Nearly 300 military officers have been assigned to duty with NASA, many of them in vital line responsibilities. This has the effect of providing NASA with information about the requirements of the Department of Defense, which will help guide its research efforts, and, in addition, serves to keep the agencies of the Department of Defense informed regarding the results of NASA research and development efforts.

During 1963 there continued a steady strengthening of understanding, coordination, and mutual support between the DOD and NASA. Mr. McNamara and I have worked closely together and the Aeronautics and Astronautics Coordination Board, as the principal medium of DOD-NASA interactions, has been re-vitalized. It has expanded its active monitorship to cover nearly every segment of the national space program. Under the aegis of this Board, we have jointly reviewed the requests for new facilities related to the aerospace R&D effort in the two agencies. This review has uncovered several instances where facilities would have resulted in duplication. Through corrective action in such cases, real economies have resulted.

Since the announcement by the Secretary of Defense of the decision to embark upon a manned orbital laboratory project, NASA has moved rapidly to gear its organization to assist the Air Force in every way

possible in this undertaking. The Gemini-B/MOL program was needed by the DOD to make an early determination of the utility of a man in space in connection with certain potential defense systems. The DOD will be able to move ahead rapidly with plans to make this determination within the desired time frame by virtue of the fact that much of the necessary basic technology and capacity to provide the hardware and to conduct such an operation have been developed by NASA and are available, just as the availability of scientific knowledge and basic space technology enabled the administration in 1961 to establish the manned lunar landing as a national goal to be achieved by the end of the present decade. Necessary supporting facilities established by NASA will be made available and fully utilized. In providing this assistance, NASA will be fulfilling its proper role under the provisions of the National Aeronautics and Space Act of 1958. At the same time, NASA will take full advantage of the opportunities presented by the MOL to further its research and development effort. Thus, the DOD and NASA will join forces to realize the maximum return from this expenditure of national resources.

During the course of this statement, Mr. Chairman, and members of the Committee, I have endeavored to indicate that the program which is being proposed in the President's appropriation request is one which will serve the nation's needs, and which will realize our national objectives in space at the minimum cost to the public.



That completes my statement. I thank you again for the opportunity to present it.

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